



A.D. 1828 N^o 5735.

S P E C I F I C A T I O N

OF

JOHN FORBES.

CONSTRUCTING FIRE-PLACES WITH DOUBLE
GRATES, &c.

L O N D O N :

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Constructing Fire-places with Double Grates, &c.

FORBES' SPECIFICATION.

TO ALL TO WHOM THESE PRESENTS SHALL COME, I, JOHN FORBES, of Cheltenham, in the County of Gloucester, Architect and Surveyor, send greeting.

WHEREAS His present most Excellent Majesty King George the Fourth, 5 by His Letters Patent under the Great Seal of Great Britain, bearing date at Westminster, the Fifteenth day of December, in the ninth year of His reign, did, for Himself, His heirs and successors, give and grant unto me, the said John Forbes, His especial licence that I, the said John Forbes, my exors, admors, and assigns, or such others as I, the said John Forbes, my exors, admors, or assigns, 10 should at any time agree with, and no others, from time to time and at all times during the term of years therein expressed, should and lawfully might make, use, exercise, and vend, within England, Wales, and the Town of Berwick upon Tweed, my Invention of "A METHOD OF BURNING OR CONSUMING SMOKE;" in which said Letters Patent is contained a proviso obliging me, the 15 said John Forbes, by an instrument in writing under my hand and seal, particularly to describe and ascertain the nature of my said Invention, and in what manner the same is to be performed, and to cause the same to be enrolled in His said Majesty's High Court of Chancery within six calendar months next and immediately after the date of the said recited Letters Patent, as in 20 and by the same, reference being thereunto had, will more fully and at large appear.

Forbes' Improvements in Burning or Consuming Smoke.

NOW KNOW YE, that in compliance with the said proviso, I, the said John Forbes, do hereby declare the nature of my said Invention to consist in placing the fire-grate from which the smoke rises immediately under another fire-grate, and then by a new arrangement for quickening the draft, causing the smoke from the under grate to pass through a clear fire in the upper grate, 5 which burns or consumes it as aforesaid; and in further compliance with the said proviso, I, the said John Forbes, do hereby describe the manner in which my said Invention is to be performed, by the following description thereof, reference being had to the Drawing annexed; and to the figures and letters marked thereon (that is to say):—

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DESCRIPTION OF THE DRAWING.

Figure 1 represents the front of a fire-grate. *a, a, a*, is the front or frame of the grate, but extended on each side to suit the chimney opening. *b, b, b, b*, is made curved or straight, behind which is a vertical sliding blower of the same form. *c, c*, is the bottom of the lower fire-grate; 15 *d, d*, is the bottom of the upper fire grate; *e* is a square opening in the iron back for the current, with heat, smoke, and dust, to ascend through a tube into chimney, as herein-after described. *f* is a knob or handle by which to draw the blower up and down, which regulates the draught and thereby increases or reduces the heat, being hung and fixed similar to a sash of a 20 window, with chains, weights, and pullies. *g* is a recess at the back to facilitate the passage of the smoke and flame from the lower to the upper fire. *h, h*, are the pulleys on which the chains (with weights) move when the blower is used; *i, i*, the weights behind the frame, put in a collar to keep them steady as they move; *k, k*, flat or curved jambs, with openings at the top to admit heat from 25 the air chambers *Q, Q*, into the room; *m, m*, cheeks having openings at the upper part to admit heat into the jambs at each side. *n* is the back of the grate, to which is fixed the tube of cast or sheet iron *P*, which conducts the heat, smoke, &c., up the chimney, and also quickens the draught. The bottom of the tube must be made horizontal; the upper part should be perpendicular to it, 30 and the meeting joint where it is united should be curved (see section or profile), but placed at such an angle as circumstances require, and fixed about 6 to 9 inches from the top *O* of the grate, which is made flat. *S*, the cap over the tube, made two inches wider in diameter than the top of the tube, and is intended to assist in contracting the draught and preventing the wind forcing 35 back the heat, smoke, and dust into the room; *R*, a pan for the ashes and cinders of the grate to fall into. Figure 2 is a plan showing the manner of setting the grate. The red colour shows the sides and back of the chimney

Fig. 3.

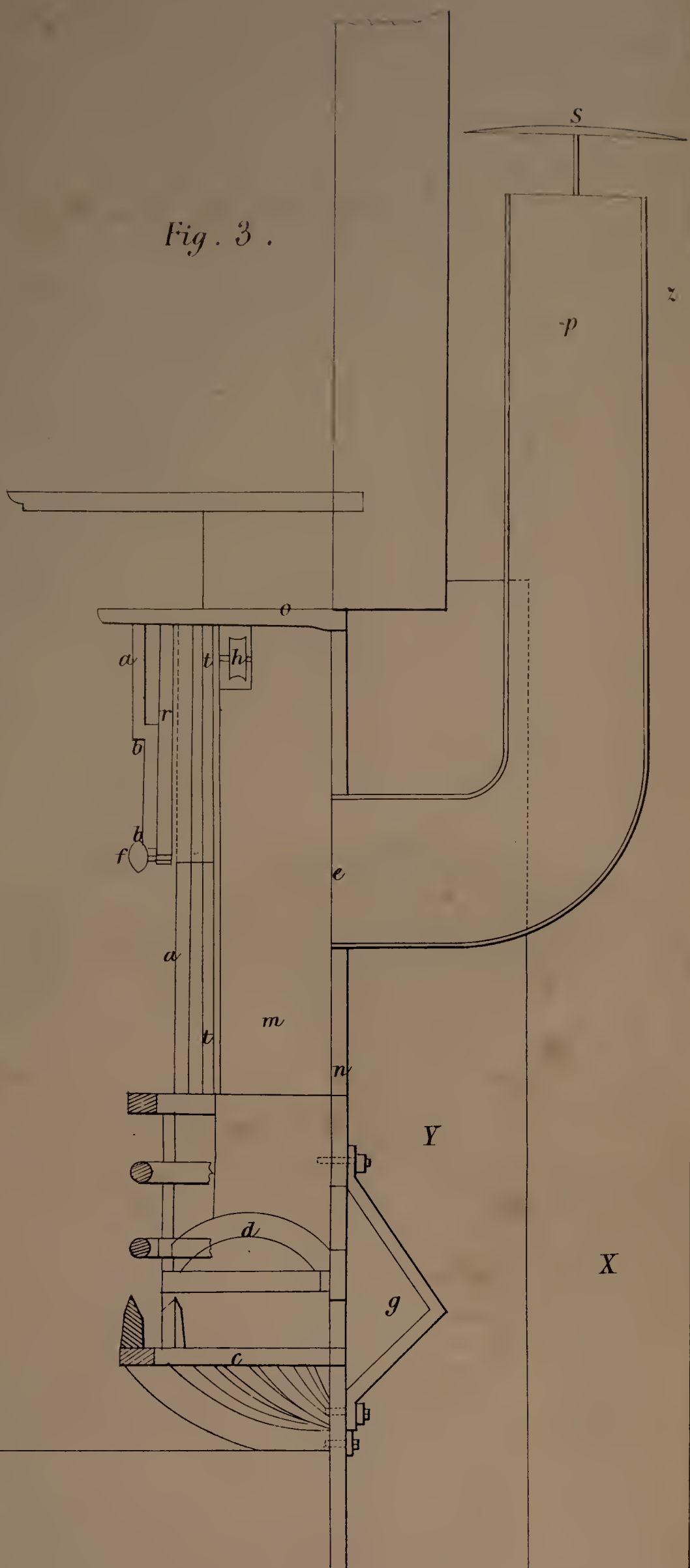


Fig. 1.

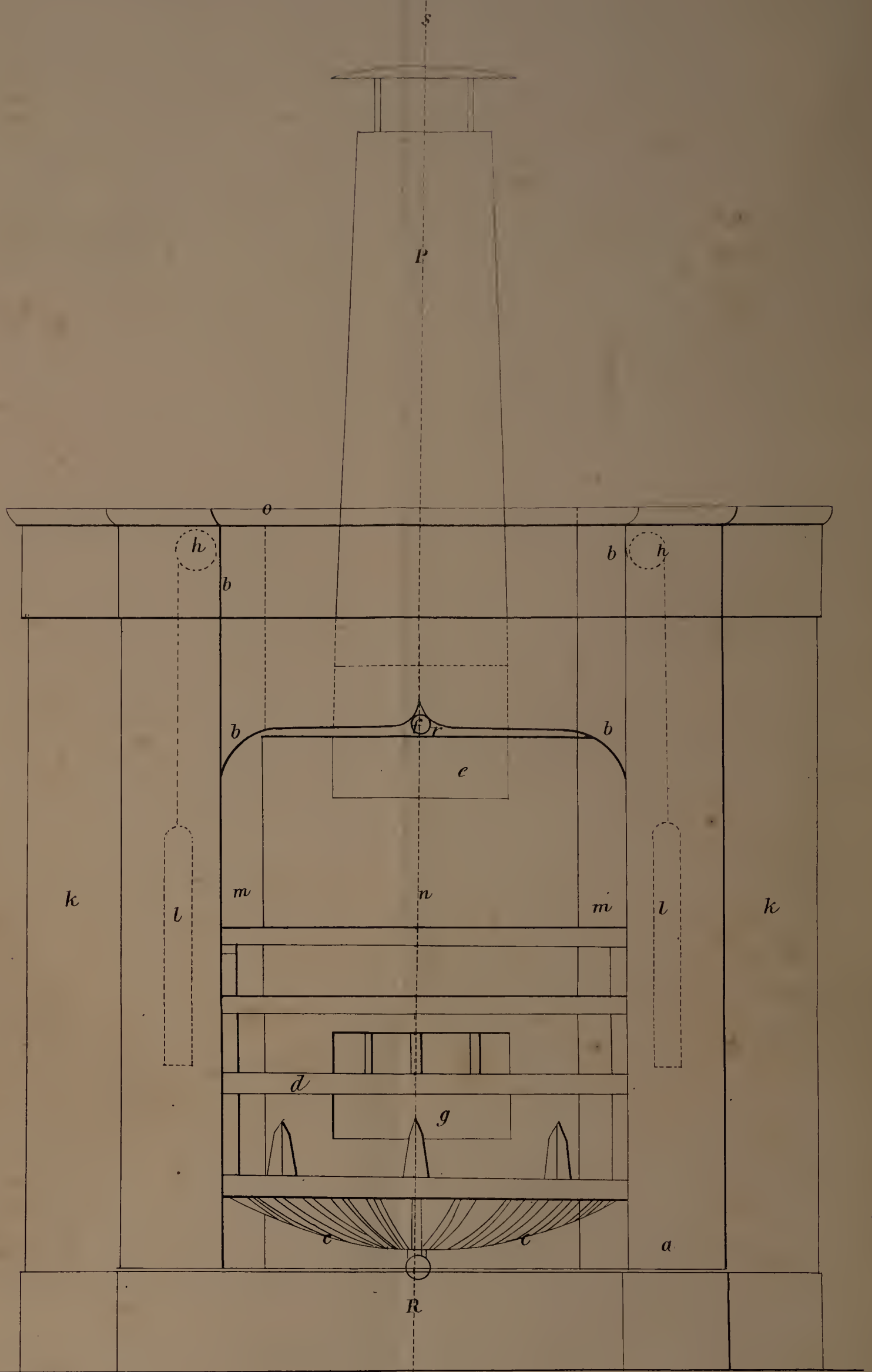
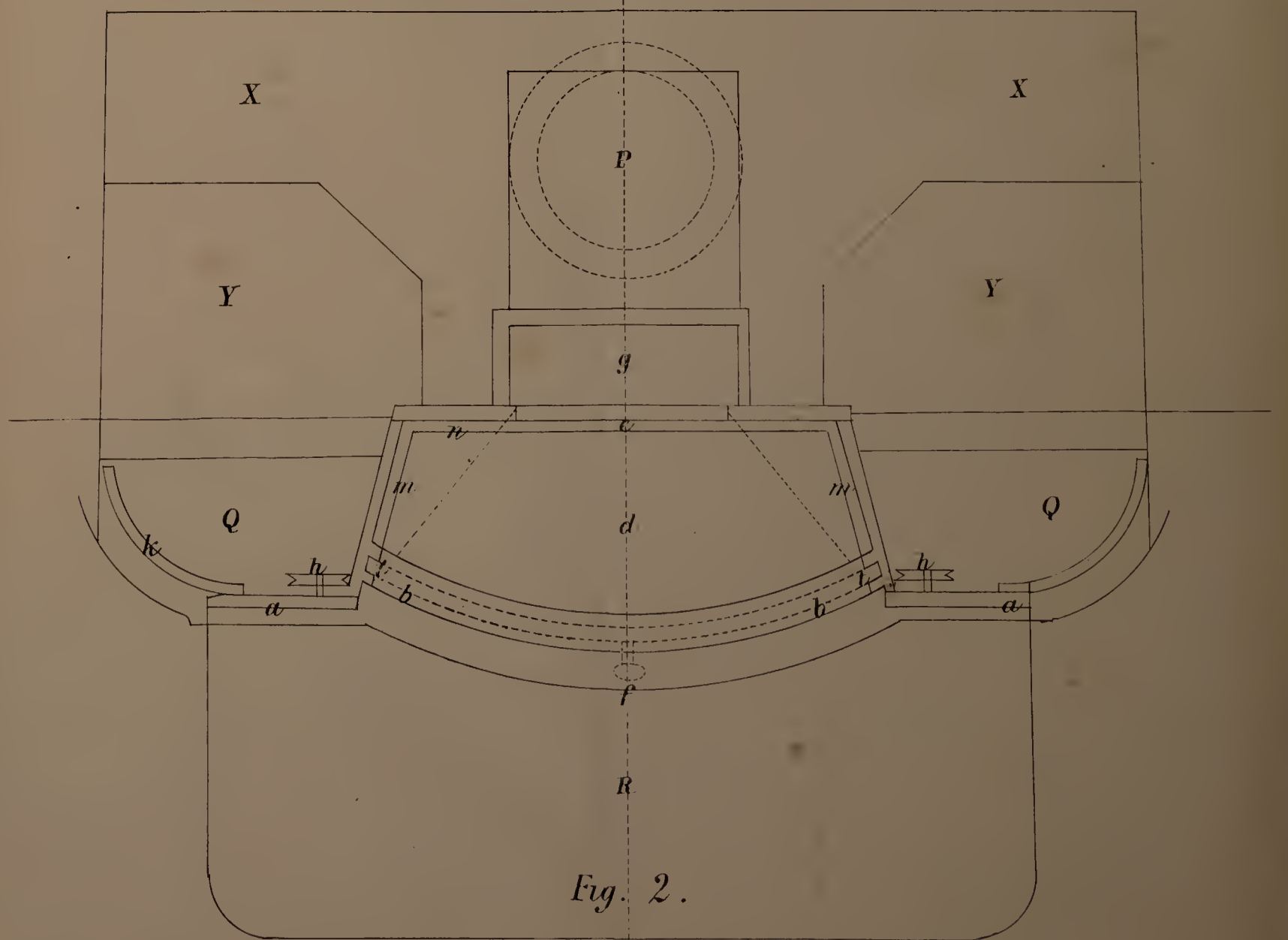


Fig. 2.



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recess or fire place in which the grate is set. Y is a partition wall of brick-work, built so as to leave a space between the back of the grate and the back of the chimney recess, which is to form an air chamber X, to receive the great warmth from the heated iron back of the grate, which, with the heat from the fire, rapidly warms the brick flue or chimney, and when sufficiently so rarefaction is kept up and the draught is thereby increased; the flue, on account of the great heat, becomes impervious to cold, and thus I prevent the wind from rushing downwards, and also the smoke and heat being thereby blown into the room. It may be well here to state that similar letters are used to denote similar parts in all the Figures. *a, a*, is the front of the grate; *b, b*, casing, behind which the blower slides down to the top bar of the upper fire. *d* is the space for the fuel of the clear fire, having extra backs, as is usual; under it is the fire C of coal; *e*, opening into the flue; *f*, the blower handle; *g*, the recess in the iron back; *h, h*, the pulleys. *k, k*, are the jamb fronts; *m, m*, the cheeks or covings, made straight or curved on plan; *n*, back of grate; P, the iron tube; Q, Q, chambers for hot air; R, the dust pan; *t*, grooves in which the blower moves. Figure 3 is the section and profile of the grate. Those parts colored red show the brick at the front and back of the chimney flue. Z is the flue; X is the chamber for heat from the iron back; Y is the brick separating the chamber from the grate; *a, a*, the frame in front; *b, b*, the case in front of the blower; *c*, bottom of the lower fire grate, made to slide horizontally in grooves to take off, if required; *d*, bottom of the upper fire grate; *e*, the entrance for the draught, &c. through the iron tube P into the chimney; *f*, handle of the blower; *g*, the recess at the back of the two grates; *h*, the pulleys; *m*, the cheeks, made curved or straight on plan; *n*, the back of the grate, made to open at bottom, or to take off at top, for the purpose of cleansing the flue; O, flat top; P, iron tube; R, the dust pan; *r*, the blower; S, the cap over the tube; *t, t*, the grooves, in which slides the blower. In making use of my said Invention it is only necessary to observe that the upper fire should be lighted first, and should be made of coke, stone, coal, cinders, or charcoal, but if mixed at first lighting with a little bituminous coal, it will ignite better and more quickly, when a bright clear fire is obtained in the upper grate keep it well fed, and a fire of any bituminous coal may be lighted in the lower grate. The recess *g* in their on back allows the smoke and flame of the under fire to pass better into the upper one, where, by the aid of the quickened draught, the clear fire burns or consumes the smoke, the blower being lowered as occasion may require.

Now whereas I claim as my Invention the arrangement of one fire grate over another, with the recess *g* communicating with both, in manner aforesaid,

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as also the air chambers X, X, and the application of the tube and cap P, S, to the back of the upper grate, for the purpose aforesaid, all which are necessary to and constitute my method of burning or consuming smoke, and such my Invention being to the best of my knowledge and belief entirely new, and never before used within that part of His said Majesty's United Kingdom of 5 Great Britain and Ireland called England, His said Dominion of Wales, or Town of Berwick upon Tweed, I do hereby declare this to be my Specification of the same, and that I do verily believe this my said Specification doth comply in all respects fully and without reserve or disguise with the proviso in the said herein-before in part recited Letters Patent contained. Wherefore I do 10 hereby claim to maintain exclusive right and privilege to my said Invention.

In witness whereof, I, the said John Forbes, have hereunto set my hand and seal, this Fifteenth day of June, in the the year of our Lord One thousand eight hundred and twenty-nine.

JOHN (L.S.) FORBES. 15

Cox.

AND BE IT REMEMBERED, that on the Fifteenth day of June, in the year of our Lord 1829, the aforesaid John Forbes came before our said Lord the King in His Chancery, and acknowledged the Specification aforesaid, and all and everything therein contained and specified, in form above written. And also the Specification aforesaid was stamped according to the tenor of the 20 Statute made for that purpose.

Inrolled the Fifteenth day of June, in the year of our Lord One thousand eight hundred and twenty-nine.

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